

Patent Claims

1. A method for producing an iron oxide/iron oxyhydroxide-containing carboxyl-bearing ion exchanger, characterized in that
 - a) a bead-type carboxyl-containing ion exchanger is contacted in aqueous suspension with iron(III) salts or
 - a') an aminomethylated crosslinked polystyrene bead polymer is contacted in aqueous suspension with iron(III) salts and with chloroacetic acid and
 - b) the suspensions obtained from stages a) or a') are adjusted to pHs in the range from 3 to 14 by adding alkali metal hydroxides or alkaline earth metal hydroxides and the resultant iron oxide/iron oxyhydroxide-containing ion exchanger is isolated by known methods.
2. An iron oxide/iron oxyhydroxide-containing carboxyl-bearing ion exchanger obtainable by contacting
 - a) a bead-type carboxyl-containing ion exchanger in aqueous suspension with iron(III) salts or
 - a') an aminomethylated crosslinked polystyrene bead polymer in aqueous suspension with iron(III) salts and with chloroacetic acid and
 - b) adding alkali metal hydroxides or alkaline earth metal hydroxides to the suspensions obtained from stages a) or a')and setting a pH in the range from 3 to 14, and also isolating the resultant iron oxide/iron oxyhydroxide-containing ion exchanger by known methods.
3. The use of the iron oxide/iron oxyhydroxide-containing ion exchangers for adsorbing heavy metals, preferably arsenic, cobalt, nickel, lead, zinc, cadmium, copper.
4. An apparatus, preferably filtration unit, comprising iron oxide/iron oxyhydroxide-containing ion exchanger as claimed in claim 2, characterized in that it is used for removing heavy metals, preferably arsenic, from aqueous media or gases.
5. The use of the iron oxide/iron oxyhydroxide-containing ion exchanger as claimed in claim 3, characterized in that it is used in combination with other adsorbents.

6. The apparatus as claimed in claim 4, characterized in that it comprises other adsorbents in addition to the iron oxide/iron oxyhydroxide-containing ion exchanger.
7. The use of the apparatus as claimed in claims 4 or 6 in sanitary and drinking water facilities.